

WHAT IS CLAIMED IS:

1. An antenna unit comprising:

a high-frequency amplifier for amplifying a reception signal received by an antenna,  
wherein, an output signal of the high-frequency amplifier is supplied to a receiver through an output cable;  
an operating voltage is supplied from the receiver to the high-frequency amplifier through the output cable; and  
a signal to control a gain is supplied from the receiver through the output cable.

2. An antenna unit according to Claim 1, wherein the output cable is a coaxial cable.

3. A receiver using an antenna unit that has a high-frequency amplifier, outputs a signal received by an antenna with a predetermined gain through an output cable, and is capable of changing the gain, the receiver comprising:

a voltage source of an operating voltage for the high-frequency amplifier; and

a control circuit for controlling the magnitude of the operating voltage,

wherein, the operating voltage from the voltage source is supplied to the high-frequency amplifier of the antenna

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unit through the output cable; and

the control circuit controls the magnitude of the operating voltage to change the gain.

4. A receiver according to Claim 3, wherein the output cable is a coaxial cable.

5. An antenna unit comprising:

a high-frequency amplifier for amplifying a reception signal received by an antenna;

an attenuator circuit; and

a switching circuit,

wherein, an operating voltage is supplied from a receiver, to which an output signal of the high-frequency amplifier is supplied through an output cable, to the high-frequency amplifier through the output cable;

a control signal is supplied from the receiver to the switching circuit through the output cable; and

the switching circuit is controlled in accordance with the control signal to selectively connect one of the high-frequency amplifier and the attenuator circuit to a signal line between the antenna and the output cable.

6. An antenna unit according to Claim 5, wherein the output cable is a coaxial cable.

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7. An antenna unit according to Claim 5, further comprising a voltage detector circuit, wherein the control signal is a voltage change in the operating voltage, the change in the operating voltage is detected by the voltage detector circuit, and a detection output thereof controls the switching circuit.

8. An antenna unit according to Claim 7, wherein the control signal is generated from an AGC voltage in the receiver, when the level of the AGC voltage is equal to or higher than a predetermined level, the attenuator circuit is selected, and when the level of the AGC voltage is lower than the predetermined level, the high-frequency amplifier is selected.

9. An antenna unit according to claim 8, wherein the predetermined level to control selection in the switching circuit has hysteresis characteristics.

10. A receiver using an antenna unit which transmits a signal received by an antenna with a predetermined gain to

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an output cable and which is capable of changing the gain in accordance with a first control signal, the receiver comprising:

a connector which is connected to the output cable;

a receiving circuit including at least a high-frequency amplifier, a variable attenuator circuit, and a switching circuit; and

a generator circuit for generating the first control signal and second and third control signals from an AGC voltage corresponding to the output level of the receiving circuit,

wherein, an operating voltage is supplied to the antenna unit through the output cable;

the first control signal generated by the generator circuit is supplied to the antenna unit through the output cable to change the gain;

the switching circuit is controlled in accordance with the second control signal to selectively connect one of the high-frequency amplifier and the variable attenuator circuit to a signal line between the connector and a circuit in the subsequent stage; and

the third control signal controls the gain of the variable attenuator circuit.

11. A receiver according to Claim 10, further

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comprising a circuit for changing the operating voltage supplied to the antenna unit according to the first control signal, the antenna unit being set so that the gain changes according to a change in the operating voltage.

12. A receiver according to Claim 10, wherein the output cable is a coaxial cable.

13. A receiver according to Claim 10, wherein when the level of the AGC voltage is equal to or higher than a predetermined level, the attenuator circuit is selected, and

when the level of the AGC voltage is lower than the predetermined level, the high-frequency amplifier is selected.

14. A receiver according to Claim 13, wherein the predetermined level to control selection in the switching circuit has hysteresis characteristics.

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